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On

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Pandemic**

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Book of Abstracts

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Indian Health Economics and Policy Association (IHEPA) is a professional body registered under the Societies Registration Act 1960. The need to have a formal body which would serve as a platform for discussing and sharing intellectual ideas pertaining to the Indian health sector was strongly felt by a group of like-minded health economists and policy experts. Over a period of four years, this group discussed, met and exchanged ideas towards the formation of an Association. The IHEPA is the culmination of this process, and has been created to enable economists and other social science researchers, policymakers and practitioners to exchange, deliberate and discuss key issues and strategies in the health sector, in India as well as globally.

Vision

A vibrant and dynamic association that encourages and facilitates the exchange and sharing of knowledge, ideas and experience among researchers, policymakers and practitioners working in and on the health sector

Objectives

- To offer a platform for learning, knowledge-sharing and networking to all those interested in contributing towards a more equitable and efficient health sector.
- To bridge the gap between research and practice by bringing together researchers/ academicians and policymakers, both national and international.

IHEPA welcomes young scholars and researchers, grassroots practitioners, the private sector and community-based organizations to become part of the organization, so that all views and experiences can be heard, debated and imbibed, if found useful.

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The experiences of ASHA workers in delivering routine immunisation services during the COVID-19 pandemic in Jammu and Kashmir: A qualitative study

Mehreena Manzoor, Sumaya Rashid

There was an unprecedented demand on our health care system due to COVID-19 outbreak. The health facilities and workforce were busy with the plethora of activities related to combat virus resulting in compromised essential health services provided to communities. The health seeking was deferred and it may be due to physical/social distancing requirements or due to perception that health facilities may be infected. To maintain people's trust on health care system it was important to focus on COVID-19 related activities along with providing essential services in order to reduce mortality by other diseases also. One of these essential services was the routine immunisation services. As these immunisation services got disrupted due to the nationwide lockdown, ASHA workers were called upon by government to reach to the community and deliver these essential services. Apart from these services they were also entrusted with mitigating the effects of COVID-19 pandemic. There are around 10 Lakh ASHA workers in India and about 12356 belong to Jammu and Kashmir. ASHA workers in the UT of Jammu and Kashmir were ordered to deliver these immunisation services by going to every household in their respective areas and ensuring that routine immunisation and vaccines are delivered to children and pregnant women. This study aims to explore the experiences of ASHA workers during delivery of immunisation services in COVID-19. In order to pursue this study and fulfilling the aim of this study a qualitative research design was adopted. The study was conducted in two districts of Jammu and Kashmir i.e. Anantnag and Pulwama. Our analysis resulted in four themes about the experiences of ASHA workers. The themes identified were- 1) Insufficient support and resources 2) Heavy workload 3) Stigma and social exclusion- within the community and family 4) Anxiety and Fear.

Keywords: Jammu & Kashmir, COVID-19, ASHA.

Health and Well-being of the Elderly People Before & After COVID-19 Outbreak: A Survival Challenge in West Bengal, India

Priya Biswas, Sanchita Roy

In the last century India has witnessed a rapid increase in the elderly population with significant interstate disparity depending upon the pace of demographic transition. The unprecedented COVID-19 pandemic might create a finite change in economic health and multidimensional uneasiness by the death toll of experienced human capital from the large proportion of elderly people, with co-morbidities. The present study systematically assesses the relative importance of socio-economic factors and other factors related to health and well-being of elderly people residing inside and outside old-age home, before and during COVID-19 lockdown. The health and well-being of elderly people has been derived through Overall Health Utility Index (HUI) method using primary information on different physical and mental attributes from 458 elderly respondents in and around Kolkata (265 residing outside & 193 residing inside). During COVID-19 lockdown and unlock process (April-June, '20) a cross-sectional phone call survey has been conducted on health and well-being from 98 elderly (20% from the previous sample). A comparative picture of health and well-being between elderly people residing inside and outside old-age homes in West Bengal, India, has shown that socio-economic factors have the highest importance. The financial insecurity, social isolation, abuse, problem with assets, loneliness, frustration and insufficiency of essentials including medical needs have been predominating factors for survival challenges of the elderly. Elderly who stay at old-age homes are suffering more in terms of survival before and during COVID-19 pandemic lockdown in absence or insufficiency of social security measures compared to elderly who stay with their family. The health and well-being of elderly has suffered a lot during COVID-19 compared to pre-pandemic situation mainly due to inaccessibility of healthcare, prescribed food and supplements, problem in receiving pension/remittance, social distancing protocol. Better social relations with suitable social pension, door to door ration and medicine supply, health check-up etc. under public control could improve the well-being of elderly even in the COVID-19 pandemic.

Keywords: Elderly, Socio-economic correlates, COVID-19 protocol, health and well-being.

Income, public health policy and varying death rate from COVID-19 in India

Pulapre Balakrishnan, Sreenath K Namboodhiry

While the response to COVID-19 by the Government of India has been more or less uniform across the country, in that a lockdown was imposed throughout, the death rate has varied across its states. This suggests that region-specific factors are likely to be relevant to the determination of this rate. In this paper we address this issue. A significant aspect of this study is the use of three different measures of the death rate in the empirical exercise. As there is a dispersion of wealth, reflected in per capita income, among the states of India, we first studied the relationship between income and death from COVID-19. This revealed none, implying that wealth is not a shield against death from the disease. It led us to investigate the possible impact of public policy towards healthcare, notably expenditure on health and the presence of physical infrastructure in the public sector. This showed all three measures of the death rate to be strongly related to health expenditure as a share of the gross domestic product but hardly at all to public health infrastructure. We interpret this as a sign of the role of the public health system - comprising medical personnel, infrastructure and protocols - in the prevention of death, with health expenditure as a key determinant of its effectiveness. Our finding has an implication for public policy beyond the immediate health emergency due to COVID-19. Failing to invest in a public health system while prioritising growth could end up jeopardizing health security.

Keywords: COVID-19, public health policy, India, developing countries

Do socioeconomic and risk factors play different roles among men and women in case of diabetes in India? A cross-sectional analysis

Sujata, Ramna Thakur

Many studies have supported the fact that the burden of diabetes is shared differently by different genders due to different factors associated with. This study aims at capturing whether women and men with a similar background, dietary & smoking habits, and biological conditions (blood pressure and BMI) are being affected by diabetes equally or differently. We have used cross-sectional data of NFHS-4 by covering the age group 15-49 years. Association between socioeconomic background, dietary habits, and biological conditions and diabetes has been estimated by using two separate multivariate logistic regression models. Results show that overall prevalence of diabetes is higher among men (2.63%) than women (2.35%).

Whereas, women belonging to urban areas (3.53%), Christian category (3.92%), richer section (3.22%), women with no schooling (2.51%), and those who reported to never consume pulses (2.66%) and green vegetables (2.40%) and daily consuming eggs (3.66%) and chicken or meat (3.54%) are more affected by diabetes than their male counterparts. Whereas men residing in rural areas (2.30%), belonging to general category (3.12%), SCs (2.37%) and STs (1.72%) are more affected than their female counterparts. Results have also shown a higher prevalence of diabetes among obese men (11.46%), non-vegetarian (2.71%) and those who watch television almost every day (3.03%) as compared to their female counterparts. Regression analyses show that richest, hypertensive, and obese women and men are significantly more likely to suffer from diabetes. We can conclude from our findings that women and men with similar socioeconomic status and dietary pattern are being affected differently by diabetes. Thus, there is a need of gender dimension in research to understand and validate the differences to have the needed interventions for diabetes control in India.

Keywords: Diabetes, gender, dietary habits, blood pressure, BMI

Digitalization, pandemic and sustainability: Telemedicine and its implications on the aging population of India

Ahana Choudhury

A rapid phase of successive changes revolutionized healthcare and its underpinnings over the course of academic and policy researches as well as public health systems. The attempt to ease the effectiveness of healthcare delivery swamped the paths of action towards telemedicine systems, which implicated information and communication technologies in a quest of promoting affordable healthcare, which is still one of the biggest challenges in a developing economy such as India. These challenges were accommodated during the phase of the COVID – 19 pandemic, which stretched healthcare infrastructures and human life-processes across the globe. Such concerns throw into debate the idea that, telemedicine is not only a system of machines inbuilt into technological apparatuses, but also leads to the understanding of social patterns which shapes varying life – experiences across different age – groups in terms of their accessibility of the system, the questions on the feasibility of its use, proper implementation across regions to its functions within the care prospects of the ‘aged’. Technology has turned into an essential human tool of comfort on one end and switched the spaces of ‘homes’ as the production units of clinical practices on the other end. So, drawing from the set of current

evidences and literatures, the paper seeks to explore and analyse the implications of aging within the process of technologically-imbibed communication, at the frontiers of diagnosis, treatment, and transitions in the social care environment. The paper also addresses the status of current telemedicine policies in India and its possibilities within the formal and informal domains of professionalization, forming the need for a 'technological capital'.

Keywords: Healthcare, technology, aging, telemedicine, communication

**Demand-Induced Stimulus package for combating Covid-19 Pandemic:
Its impact on public debt in India**

Duragesh Pujari, Shreya Suppannavar, R. R. Biradar

The impact of the COVID-19 pandemic on the global economy has a higher adverse impact than that of the 2008 economic crisis. World is facing a big challenge towards controlling of COVID-19 pandemic everywhere. The central and state governments are grappling with the problem of revenue mobilization and have collected less revenue at the time of lockdown and also post lockdown period and likewise both governments will not be able to meet 2020-21 budget targets due to spontaneous expenditures made on COVID-19 pandemic. Central government will not be able to meet the 2020-21 budget targets either. Due to the lockdown, fiscal imbalance and public debt have soared in India. Therefore, central government borrowed 12 lakh Cr of loan from abroad to fill the gap between the expenditure and revenue of government during period of the pandemic. As a result, the overall deficit was -13 percent and primary deficit -7.2 percent in 2020FY which was predicted by IMF. The OLS empirical results demonstrate that Covid-19 pandemic has an effect on the public debt to GDP ratio in India but it is not statistically significant. Study recommends that a country should be allowed to take up larger deficit but should refill the deficit finance by domestic sources rather than external sources. It saves the country from external dependency, high level of interest payments, external debt trap and lower debt to GDP ratio leads to better economic development of the nation.

Keywords: Covid-19, Economic Growth, Public Debt, Fiscal Balance.

Does health expenditure vary among energy-poor and non-poor households in India?

An investigation from NSS data

Mohammad A Faizan, Ramna Thakur

Energy poverty, also known as fuel poverty, gained wide recognition when Brenda Boardman published her seminal work 'Fuel Poverty' in 1991. In 1990s, majority of the global population lacked access to clean and affordable energy services which brought the issue of energy poverty to the forefront. Over the years it has emerged as an important issue in literature as well as in public policy since it is inevitable to sustainable welfare of the society and is vital in achieving a high quality of life. Energy improves the quality of life which is vital in increasing the welfare of the society. Access to energy and the services it renders has fortified socio-economic development and human wellbeing over the past few centuries. Energy as a fuel is used every day in our life, whether it is in kitchen for cooking and lighting the houses or for transportation and other activities. Energy is an essential determinant of health and was not given due importance earlier in the research and policy making around the globe. It is damaging and fatal, especially in those households where solid biomass is being used for cooking and lighting, which is inefficient and creates indoor pollution. In this paper, multidimensional energy poverty index is constructed which captures energy poverty. In order to understand the intensity in the burden of health expenditure among energy-poor and non-poor households, concentration index is employed which measures the level of disparity in the burden of health expenditure. Measuring energy poverty requires an extensive database of the household to provide a coherent response to the household energy situation. The concentration of health expenditure for health is positive in all deciles in energy poor as well as non-poor households. Similarly, health expenditure among energy-poor and non-poor households in urban areas reveal concentration is negative for health expenditure from 4th decile till 8th decile in energy-poor households. Concentration is positive in each decile of energy non-poor households. These results reveal that health expenditure increases when a household moves from lower decile to higher decile. However, in energy-poor households, concentration is positive in the lowest three deciles and higher two deciles excluding the middle deciles from 4th to 8th decile, which is negative. On the other hand, concentration of health expenditure is positive for each decile in energy non-poor households. The health expenditure is higher in all deciles in energy-poor households in rural as well as in urban areas except highest two deciles (9th and 10th). At the national level, the share of health expenditure in the total consumption expenditure is higher in each decile among energy-poor households. We found that the expenditure on health is high

among energy poor as compared to non-poor households. It shows that energy-poor households face hindrance due to higher expenditure on health to their real freedoms to achieve better health and wellbeing.

Keywords: Energy poverty, MEPI, Health expenditure, Energy expenditure, Intensity

COVID 19 vaccine prioritization dynamics in India: A tactical solution for policy makers

Neha Shri, Mayank Singh, Deepak Dhamnetiya, Kritika Bhattacharyya, Ravi Prakash Jha, Priyanka Patel

An unprecedented need of allocation and distribution of COVID-19 vaccines lies ahead as the scientists all over the world race to develop effective and potential vaccine for COVID-19. In the wake of increasing COVID-19 cases and attributable deaths, the only real exit strategy from this crisis is a vaccine to immunize an extraordinarily large number of individuals in order to protect the entire global community from the continued threat of morbidity and mortality. The distribution of limited vaccine supply will require strategies for ensuring the equitable worldwide distribution to meet the global needs in a fair, public health driven manner. This paper provides an insight into conceivable method to meet the challenges of vaccine allocation. Research suggests that in order to save most lives, it is imperative to provide vaccines to front line health care workers and medics along with people more vulnerable because of age or other comorbidities and illness. This study underlines age as a prominent factor in the spread of infection. Thus, people at older ages should be prioritized to avert negative outcomes of infection. People with underlying comorbid condition need specific attention during the initial vaccination campaign. Immunizing the young and healthy individuals mounting the greatest immunity response can work as an expanded sort of herd immunity. Fair evidences are available that pregnant women have an increased risk of severe illness and should be prioritized for vaccination. Findings also suggests that there is a need to pay attention towards the minority group of India while exercising community vaccination. Based on WHO strategic allocation, India needs around 293 million doses of vaccination in the initial phase to combat the spread of infection.

Keywords: COVID-19, Vaccine Allocation, Vaccine distribution, Prioritization, Recommendations, India

Health Crisis in India during COVID-19 Pandemic: Indicator of Failing Neo-liberal Capitalism

Narender Thakur & Vaishali

This paper critically examines the neo-liberal economic processes of de facto and de jure privatization of Indian health care sector in the pre-Covid-19 period which has been the main instrumental factor behind not flattening of the Covid-19 virus curves showing rise in cases and deaths in India. The paper examines the Indian status of COVID-19 by comparing with other communist and highest human developed countries (Cuba, Germany, New Zealand, Norway, Sri Lanka). The Indian case is also compared with the US and Brazil, where the privatization in terms of out-of-pocket health expenditure is highest reflecting higher private health expenditure. To examine the health infrastructure development, three health indicators are analyzed, viz., physical (hospital beds per 1000), financial (out-of-pocket private health expenditure with percentage of government expenditure in health in Gross domestic Product), and human (physicians, and nurses and midwives per 1000 people). The paper observes a dynamic link between privatization of health care and poor public health infrastructure. This link has played an instrumental role in encouraging more corrupt practices (rent seeking behavior) and non-flattening the curves of infections and deaths in this pandemic. Thus, in the current scenario this paper strongly advocates universalization of health care services with higher public funding to finance the public health care to all to ensure the achievement of the Sustainable Development Goal 3 by 2030. For the long run, the paper emphasizes the need to change the political economy of Indian healthcare sector to ensure public good like health to all, as in the case of Cuba.

Keywords: Covid-19, Pandemic, Public Funding, Health Infrastructure, Privatization and SDG 3.

Correlation between Human Development Index and risk of infections and deaths of COVID-19 in India: A state wise analysis

Isha Sharma, Ashish Thakurb

Coronavirus disease (COVID-19) was characterised as pandemic by WHO after the assessment of the levels of spread and severity in March 2020. The COVID-19 upsurged quickly in India soon after the first case was registered in January 2020. As of November 15, 2020, India ranked

2nd with 8.84 million confirmed cases among the 28 states and Union Territories. Economic activities have observed the largest contraction since the Great Depression, people round the world are losing on their jobs, educational institutions have been shut, students are dropping out of schools due to lack of availability of appropriate technology, gender-based violence is increasing drastically, the mental health of people is deteriorating terribly. All such factors indicate that the COVID-19 pandemic is unleashing a human development crisis. All the constitutive elements of Human Development Index (HDI): income, health and education are being acutely affected. In this analysis, we observed that HDI correlates with infection rate (proportion of confirmed cases among the population) and the death rate of COVID-19 in states and Union Territories of India based on data as of November 15, 2020. Further analysis showed that HDI is negatively correlated with cigarette consumption, whereas it is positively correlated with chronic disease and average annual gross salary. These factors may partially explain why unexpected positive correlation is observed between human development index and risk of infections and deaths of COVID-19 in India.

Keywords: Coronavirus, Human Development Index, Regression, State wise Analysis

Growing up amidst COVID 19 crises – Deprivation and distress experienced by underprivileged children in India

Monisha Israni

The objective of this paper is to focus on underprivileged children who have been cornered away under the current paradigm due to inequitable access to resources and services quintessential for their development amidst the ongoing pandemic. The paper voices the deprivation and distress experienced by underprivileged children dissecting the geopolitics of this neglect by tracing the roots of exploitation of children in crisis situations in history (Pandey). The theme of this paper addresses an understudied and critical component of heightened vulnerability to exploitation in form of child labour and higher predisposition to multiple forms of abuse during the COVID 19 pandemic (Ghosh, Dubey and Chatterjee). It throws light on the intricacies of their challenges and coping strategies in response to the sudden distress and deprivation induced during the pandemic (Sinha). This paper argues a dire need for policy interventions for children from marginalised communities to mitigate the ripple effects of extended school closures, financial distress at household level, and restricted access to welfare and social security schemes during the crisis on their lives (Gooptu). The research

paper critically analyzes the compounding effect of the catastrophic crisis that has exposed the grim realities of deeply entrenched socio-economic inequalities. In spite of scholarly recognition of this issue from non-government agencies and various local initiatives, there has been a lacuna in analyzing the gravity of multidimensional vulnerability in the context of underprivileged children. The paper therefore attempts to draw attention to the plight of underprivileged children in third world countries who are battling with the deleterious impact of the pandemic and are extremely vulnerable to exploitation in the form of child labour, child trafficking and multiple forms of abuse on the domestic front during this crisis. It is critical to examine the multiple facets of vulnerability of children in a holistic way to estimate the cumulative effect of these variables severing their overall development thereby debarring them with opportunities to become productive citizens in future. The paper examines the impact of the crisis on heightened vulnerability to exploitation and abuse due to the cumulative effect of various factors such as school closures, lack of support systems and financial distress in their household (Howes et al, 2020). This research paper has conferred to a descriptive representation of multi-dimensional deprivation of underprivileged children whose lives have been deeply tampered by the socio-economic impact of the ongoing pandemic (J. Zar et al, 2020). The paper advocates that implementation of stringent measures for child protection is the need of the hour to mitigate the widening gaps in social inequity under the ongoing COVID 19 pandemic scenario (Robson).

Psycho-socio-economic impact of Covid-19 pandemic: an epidemic expert perception based study in India and its global importance: original research with a Systematic review.

Ravikumar SK, Shanthkumar RN

India with the second largest population in the world is suffering severely with Covid-19 pandemic. With the pandemic situation, insufficient healthcare facilities, poor managerial skills of health care workers, poor knowledge attitude and practices towards the disease have augmented anxiety and fear in the public. The present study intended to conduct an epidemic expert perception-based analysis to get an idea of people's psycho-socio-economic impact during the COVID-19 pandemic in India. A self-administered semi-structured questionnaire was sent through Google form for epidemic expert's opinion. The sample size consists of 266

assenters. Datasets were analyzed using appropriate statistical techniques including multi-linear regression analysis. A systematic search of the literature was done to identify impact of Covid-19 on psycho-socio-economic factors related articles in PubMed, Embase, Medline, Web of Science, and Scopus published between January 2020 and December 2020 from India following PRISMA guidelines. A significant association was found to be between fear of the COVID-19 outbreak and the inefficient health care system ($p < 0.05$). A significant association was found to be strategies like lockdown, social distancing with the fear of losing one's own or a family members' life ($p < 0.05$). Lack of healthcare treatment was significantly associated ($p < 0.05$) with mental and economic stress. A positive association was found between the possibility of a severe socio-economic health crisis and hike in the price of basic essentials like food, shelter, education and transportation variables. A positive correlation was seen in between the rise of diseases like dengue due sudden climatic change and the food insecurity. On systematic review, risk factors associated with psycho-socio-economic distress include male gender, elderly age group (≥ 40 years), presence of co-morbidity, unemployment, student status, and frequent exposure to social media/news concerning COVID-19. With COVID-19 pandemic situation, decreased GDP and increased psycho-socio-economic burden, the administration should take appropriate necessary steps for assessment of risk, behavioral change communications, and monetary incentives through universal health coverage towards the public to ease their anxiety and fear and to take proper action to enhance socio-mental health and well-being. Extenuating the harmful effects of COVID-19 on socio-economic-mental health is a national public health priority.

Keywords: COVID-19 Psycho-Socio-economic impact, an epidemic expert perception, Systematic review.

Older adults' psychological and subjective well-being as a function of household decision making role: Evidence from cross-sectional survey in India

Shobhit Srivastava

There will be more than twice as many older persons as children under five years of age by 2050. As people get older, their everyday decision-making abilities seem to be under increasing scrutiny which contributes to low psychological health and low subjective well-being. Therefore, present study examines the role of improving and declining household decision-making of older adults on older adults' psychological health and subjective well-being. Data

for 9141 older adults from Building a Knowledge Base on Population Aging in India (BKPAI) was utilized. Psychological health and subjective well-being among older adults were the outcome variables. Descriptive statistics and bivariate analysis was used to find the preliminary results. Further, multivariate analysis has been utilized to confirm the findings. Results showed that older adults whose role declined as a decision-maker were 3.01 times and 2.35 times significantly more likely to have low psychological health (AOR: 3.01; CI: 2.66-3.41) and low subjective well-being (AOR: 2.35; CI: 2.08-2.66), respectively, as compared to those whose role as a decision-maker improved/remained same. Other characteristics such as age of the respondent, education, community involvement, and trust also improve psychological health and subjective well-being among older adults. This study provides first-hand information on the role of decision-making and its impact on psychological health and subjective well-being among older adults, however, additional studies that replicate, extend, and improve on this research are urgently needed. Evidence that community involvement positively affects psychological health and subjective well-being calls out for improving ways to increase social participation among older adults.

Keywords: Decision-making; Psychological health; Subjective well-being; Older adults.

Effect of Menstrual Hygiene Scheme on adolescent girls of India: Intervention channels revisited

Olivia Sarkar, Arijita Dutta

The study highlights the impact of Menstrual Hygiene Scheme (MHS) in India after 5 years of its' implementation using NFHS4 unit level data on women. A difference-in-difference methodology with covariates used in the study found that MHS has increased the probability of usage of only the subsidized product, that is locally made sanitary napkins, but has failed to bring about overall behavioural changes. It is awareness generation over affordability that results in differences in usage of locally produced sanitary napkins. Probability of using subsidized menstrual product is significantly greater only when there is a differential share of peer using hygienic products. The difference in share of peers using hygienic products boils down to difference in awareness when controlled for individual and household characteristics affecting menstrual hygiene. A shift in usage to locally made sanitary napkins bought about by awareness generation in lieu of affordability concern is a clear sustainable shift and could thus be visualized as success of the Menstrual Hygiene Scheme.

Keywords: Ordered probit, Peer influence, Behavioural changes, locally made sanitary napkins, Menstrual Hygiene Scheme.

Violence and associated health outcomes among older adults in India: A gendered perspective

Muhammad T, Shobhit Srivastava

The present paper examines the health consequences of violence against older adults and its gender differentials in India. Using data from Building Knowledge Base on Population Ageing in India (BKPAI), we employed bivariate and logistic regressions on a sample of 9181 older adults to fulfil the objective of the study. About 10.7% and 11.3% of men and women faced violence after turning 60 years respectively. Older adults who ever faced violence after turning age 60 years had 60%, 41% and 33% higher likelihood to have poor self-rated health, low activities of daily living and low instrumental activities of daily living respectively in comparison to their counterparts. Further, it was found that older adults who ever faced violence after turning age 60 years had 97% and 62% higher likelihood to have low psychological health and low subjective well-being. Violence against older adults must be recognized as a key public health issue. Study findings indicate the immediate need for assessing victim health outcomes following any type of violence in later years to determine related policies and programs to protect the victims.

Keywords: Older Adults, Violence, Health Outcomes, Gender, India.

Prevalence and pattern of chronic multi-morbidity among Indian elderly: The gender perspective

Palak Sharma, Priya Maurya

Background: India is undergoing a huge demographic and epidemiological change resulting in increase in the ageing of population. With this, the number of people with coexistence of multiple chronic diseases is also set to rise. Objective: The main purpose of the study is to identify the most prevalent combinations of self-reported chronic diseases among elderly living with multi-morbidity in India. This study also examines different factors that affect the multi-morbidity status in Indian elderly population and to determine the gender differential in the

prevalence and pattern of multi-morbidity. Data and methods: This study used the data from the Building a knowledge base on Population Ageing in India (BKPAI), which was conducted in 2011. Presence or not of multimorbidity is considered as the outcome variable. Bivariate and logistic regression analysis has been done to access the pattern and predictors of multi-morbidity among elderly. Relative risk of multimorbidity for all different chronic conditions and the prevalence of most prevalent disease combinations are also calculated for each sex. Results: Overall prevalence of multi-morbidity among elderly was 32.96% and found to be higher among women (34.69%). Age, gender, religion, wealth quintile, current working status, smoking, alcohol were significant determinants of multimorbidity. The prevalence of arthritis or rheumatism, diabetes and hypertension was found to be higher among women in the multimorbidity group than men of the same group, while Asthma and heart diseases were found more in men with multimorbidity. Conclusion: Multimorbidity is an emerging issue and highly associated with ageing. There lies gender differences in the combination of diseases and its prevalence. There is a need to strengthen healthcare services for both the men and women using gender specific analysis, keeping in mind that both the genders have different priorities in terms of healthcare utilization.

Keywords: Disease combination, Elderly, Multimorbidity, Risk factors

Assessment of bio-medical waste before and during the emergency of novel Coronavirus Disease (COVID-19) pandemic in India

Rahul Rajak

Considering the transmission of COVID-19 disease globally, excessive bio-medical waste (BMW) has become a major threat to public health and the environment. India already has inadequate waste treatment facilities and coronavirus has crossed ten million cases, consequently BMW management becomes a more serious concern. Amid crisis, the current study provides a comprehensive assessment of BMW generation, collection and management across the states of India before and during COVID-19 pandemic. Additionally, the article highlights the challenges and gaps of the current BMW management in India. This study uses data from various government and non-government organizations, their reports and official websites. Central Pollution Control Board (CPCB) is a nodal agency under the government of India; we specifically focused on its data in this study. Study finds that most States/UTs have exceeded the capacity of existing treatment/disposal facilities. Furthermore, more than 50

percent of the States/UTs have inadequate disposal facilities. The implementation of BMW guidelines during the pandemic became a major concern, since there are many gaps identified with compliance of BMW Management Rules. The present research recommends alternate solutions for sustainable waste management and outlines the further scope of work so that we will be able to handle similar pandemics in future. It will also be beneficial to the policy-makers, researchers, public health professionals, and the general public.

Keywords: Bio medical waste, COVID-19 waste, Bio medical waste management rules, State-Distribution.

Burnout among specializing and super-specializing doctors: A comparison and evaluation before and after the Covid-19 pandemic

Namrita Shankar, Roopa Patavardhan

The study focuses on determining the level of burnout among specialising and super-specialising doctors and to check how the COVID-19 pandemic has affected its prevalence among those doctors. The study has been conducted in two time periods- the first time before the pandemic and the second time during the COVID-19 pandemic. The primary study conducted before the pandemic has been conducted in two parts - a structured questionnaire and in-depth interviews. This study was conducted using a sample size of 150 specialising and super-specialising doctors for the questionnaire and 10 doctors for the in-depth interview. These specialising and super-specialising doctors were all based in Bangalore. The questionnaire used for the primary study was derived from the Maslach Burnout Inventory and the Copenhagen Burnout Inventory which helps in determining and quantifying the level of burnout of the respondent. In the second time period, i.e., during the COVID-19 pandemic, a survey was circulated among 50 of the respondents who had participated earlier i.e., before the pandemic, to check if the pandemic has had any impact on their level of burnout. The study has concluded that almost all the respondents have burnout by at least one of the measures, if not more. The results prove that burnout among doctors is a highly relevant and important issue that requires its due attention. Constant and continuous exposure to unhealthy stressors can increase the level of burnout. The more frequently this happens, it could lead to a decrease in the retention of doctors to the labour market, which could have dire consequences, considering how India's healthcare stays unique due to its formidable workforce of healthcare workers.

Keywords: Burnout, Doctors, Health care, MBI, Copenhagen Burnout Inventory

Choice of Health Facility among Tuberculosis Patients in India

Paramita Barman, Arijita Dutta

Predominance of the largely unregulated and unmonitored private sector in India's health care delivery system in general, applies even to public health maladies like pulmonary tuberculosis (TB) with growing evidence of questionable quality of TB care, staggering patient costs and an overall failure of market. The advent of the COVID 19 pandemic further threatens to reverse any recent progress in reducing the burden of TB disease worldwide. Against this backdrop, the issue of choice of facility by patients assumes crucial significance as evidence suggests that the poorer and more vulnerable sections of the population bear a disproportionately higher burden of this disease. It remains hitherto unexplored how far the choice of facility for general morbidity in a household can affect the same for TB and this paper expects to address the gap. Besides, the paper would add to existing knowledge through exploration of the switch in health facility choice by habitual users of private and public health services, in the event of TB. The study uses unit level data from nationally representative datasets - NFHS-4 (2015-16) and NSSO 71st (2014) and 75th (2017-18) health rounds and employs the recursive bivariate regression model besides simple statistical tools and logistic regression analysis. Results show that over the years, preference for public sector for TB care seems to be increasing, cutting across almost all income classes. Though choice of health facility for general morbidities does affect the choice for TB care, there are clear differences in their respective correlates. In conclusion, although attempts have been made by the government to engage private providers in the delivery of TB care both through mandates and incentives, stricter monitoring is called for to curb under-notification and variable standards of care with policy design towards greater inclusiveness of the national program.

Keywords: Tuberculosis, NTEP in India, Private facility, Public facility, Switch in facility type

Health Economics Education in India: Current Scenario, Challenges and Opportunities

Gogoal Falia

At 3.5% of GDP, India's healthcare spending is paltry compared to 17% in the US, 8.8% in the OECD and 5.1% in People's Republic of China. For a country of 1.38 billion people, there are 550 hospital beds per million population compared to the WHO's recommended 5,000 hospital beds per million. The picture is further complicated by the fact that the majority of Indian

healthcare spending is out-of-pocket. To develop a better understanding of healthcare consumption, maximize efficient utilization of scarce resources and undertake research enabling healthcare decision-making at the highest level, an efficient network of health economists is needed. A comprehensive review by the author revealed just three graduate level health economics programs available in India, along with four certificate courses. Apart from limited coursework in medical colleges under the aegis of the Community Medicine Department, there is no undergraduate training for students on the basics of health economics. One concerning factor in particular is the presence of public health research organizations' rather unidimensional approach when it comes to health economics in India. Their research activities involve collaboration with international researchers, but these collaborations have not culminated in the development of teaching and training programs in health economics for the broader healthcare community. Its applied nature places health economics in a precarious situation wherein limited resources force university economics departments to abandon planned health economics awareness initiatives, while healthcare educators lack proper training in economics to provide impactful teaching. Furthermore, India's rigid educational structure and obsession with doctors and engineers provide no incentive to early-stage health economics researchers, often internationally trained, to return to India and address these challenges. Nevertheless, this creates opportunities for international organizations like International Health Economics Association (iHEA), The Economics Network, Health Economist's Study Group (HSEG) and public health schools (health economics faculties) to collaborate and develop India-focused training programs and materials, jointly with Indian healthcare research institutes. Government backed initiatives, e.g., promotional drive, incentives to universities, scholarships and so on could help popularize the subject. Curriculum changes especially in health and economics undergraduate programs with greater inclusion of health economics and healthcare finance concepts would be highly beneficial. Postgraduate level health economics electives and running dual-degrees/joint policy master's programs can make health economics a significantly more attractive prospect for students. Covid-19, for all its torment, has brought out in the open the problems faced by the Indian health system. To be better prepared for the next Covid-19 and for the overall welfare of her citizens, India and its government must address the issues raised by the author.

Keyword: India, health economics, training, education, Covid-19, iHEA, health policy

Assessing the role of socio-economic, maternal and service utilization factors in increasing self-reported maternal complications in India

Pradeep Kumar, Shobhit Srivastava¹, Chanda Maurya¹, Preeti Dhillon

Self-reported maternal complications are associated with maternal morbidity, caesarian deliveries, postpartum depression, and maternal death. Therefore, it is essential to examine the contribution of socio-demographic and maternal characteristics and service utilization in the rising self-reported maternal complications (difficulty with daylight vision or convulsion or swelling of the legs, body or face or massive vaginal bleeding or very high fever) in India. The study aimed to examine the underlying determinants that have influenced the increasing prevalence of maternal complications between 2005-06 and 2015-16 in India. Data from two most recent rounds of National Family Health Survey consisting of a sample of 36,850 and 190,898 women who delivered in the last five years preceding the survey has been used. Logistic regression analysis was used to carve out the significant factors contributing to maternal complications among women aged 15-49 years in India. Further, using Fairlie-decomposition technique, the study quantified the contributing factors of the change in maternal complications from 2005-06 to 2015-16. Results show that there was a significant increase in the prevalence of maternal complications from 43.6% to 53.7% between 2005-06 and 2015-16. Out of the total change in maternal complications, about 21% was explained by selected socio-economic, demographic, maternal and service utilization factors. For instance, service utilization (place of delivery: 13% and postnatal care: 6%) was the major contributors (i.e. it contributed towards the increment of maternal complication's from 2005-06 to 2015-16), followed by, individual (education: 2% and body mass index: 4%) factors in increasing the self-reported maternal complications. Moreover, household factors (standard of living:-3.7% and region:-1.4%), tobacco use and birth weight were the only contributors which reduced the complications over time. In conclusion, the increasing prevalence of maternal complications in India was mainly attributed to the increase in maternal healthcare services utilization, and mother's BMI. However, reduction in prevalence of maternal complications can be attributed to the reduction in low-birth-weight babies and tobacco use among women in India.

Keywords: Maternal complication; Decomposition; NFHS; India.

An exploratory study of maternal and child health situation in Pune during COVID-19 pandemic: Perspective of non-state actors

Khushbu Thadani

The COVID-19 Pandemic has had an unparalleled global impact that has caused many disruptions in multiple dimensions in the health domain. Since its onset from March, 2020 the Government of India, State Governments, local authorities and various community based and Non-Governmental Organizations have been directing all their efforts towards handling the crisis. The Ministry of Health, Government of India and the World Health Organization (WHO) had formulated guidelines that focused on tackling the crisis with uncompromised simultaneous attention towards regulating provision of routine health services. Over a period of time, it has been observed that there has been a gradual shift in terms of prioritizing the pandemic requirements leaving behind other essential health needs in the country. Report by the United Nations states that while the available evidences on impact of COVID-19 on infant and maternal mortality may be limited, the indirect effects straining from strained health systems, loss of household income and disruptions to care seeking and preventive interventions like vaccination may be substantial and widespread. These disturbances have been witnessed not only at the public and private health institutions but even Non-Governmental Organizations (NGOs) and the civil society organizations are facing challenges to continue with their long term projects for welfare of the society. One of the biggest challenge for the NGOs has been shortage of funds. This is mainly attributed to diversion of funds for COVID-19 relief and limited contributions made by existing donors due to slowing down of the economy and less income (Economic Times, 2020). This paper focuses on the interventions and initiatives undertaken by non-state actors in Pune during the pandemic. It centres mainly on organizations, NGOs that cater to maternal and child health care. The aim of the paper is to probe to gain insights into the challenges faced by the organizations specially for fostering women and child health. This includes routine immunization especially for infants, maternal health care for ante-natal and post-natal check-up and delivery of the pregnant mothers, health care of the elderly and emergency cases. The methodology adopted in this study is mainly qualitative. The study sample includes key people who are involved in the implementation of the social projects from non-state actors including NGOs which are Pune based and which work closely on maternal and child health. Semi-structured in-depth interviews will be conducted with the stakeholders. Secondary data in terms of relevant reports compiled by the organizations and literature available on the websites is also used.

Keywords: women health, non-state actors, child health, COVID- 19 pandemic

Impact of Pandemic on Health Outcomes: How inclusive is sanitation?

Kiran Johnson

This study is based on empirical framework. In India hardly 1.15% of GDP is currently spend on heath, and government orates to increase public health expenditure by 2.5% by 2050, a figure inadequate to support current health needs of the country or deal with the pandemic. Moreover, Covid-19 preventive measures such as washing hands with soap or sanitizer questions sanitation and hygiene practices followed by people. For long, sanitation was never seen as a dignified topic to be part of familial or friendly discussions; people without adequate sanitation facility felt missed out and vulnerable but suffered in silence. Slowly, with the coming of Sustainable Development Goals sanitation topic gained prominence, as goal 6 and later central government gave the needed push with Swacch Bharat Mission hoping to make the country open defecation free by 2nd Oct, 2019. These steps did bring inadequate sanitation upfront but could not address the issue. We cannot ignore the problem any longer, as Covid-19 preventable with adequate sanitary practices, demands quick fixes with inclusionary practices. The question is: How inclusive is current sanitary practices and facilities in public spaces to reduce the pandemic? This study is based on case study conducted by interrogating sanitary practices in place, by conducting access audit of 5 community toilets in 2 zones in Raipur city and focus group discussion and in-depth interview of 57 urban dwellers in Raipur city with varying age, gender and functional status. The study concludes with age it is difficult to modify one's sanitary practices. People suffering with disability need sanitary facilities taking their functional status into consideration. In addition to this, people should not be thought in binary, their gender preference (lesbian, gay, bisexual and transgender) should be respected. People should be empowered with inclusive sanitation and hygienic practices to reduce disease prevalence.

Keywords: Covid-19, inclusive sanitation, age, functional status & gender fluid

Justice and sanitation governance: An institutional analysis of SBM program implementation in the state of Uttar Pradesh, India and Covid-19 implications

Kopal Khare

Adequate water and sanitation provision is one of the fundamental amenities in developing countries. Swacch Bharat Mission Rural (SBM-R) program launched by Government of India in 2014 aims at providing full toilet coverage. In the domain of distributive justice, institutional arrangement facilitates a totality of environment for better provision of resources to the citizens. SBM-R has a multi-level institutional structure engaged in conception, coordination, implementation and monitoring of the activities. There are number of factors that govern sustained sanitation outcomes, failure of which might lead to slippage – means falling back of the households to the lower stages of sanitation life cycle. In this paper I present the institutional analysis done through Sen's conception of justice. A total of 42 interviews and 12 focus group discussion were held with state and non-state actors engaged in implementation of program. The analytical framework used is sanitation well-being framework based on Sen's capability approach which offers a set of attributes to evaluate how just are the situations in sanitation. It lists out capability constraints and expansion factors determining slippage. It has implications on current pandemic as prevention from COVID-19 is inextricably linked with observing good sanitation practices. This analysis would help situate and address the manifested gaps in the current scenario.

Keywords: Justice; Sanitation well-being; Governance; Slippage; COVID-19.

Drivers of healthcare spending on inpatient care in India: Evidences from National Sample Survey, 2014

Rinshu Dwivedi, Megha Susan Philip, Ramesh Athe, Jalandhar Pradhan

Demand for healthcare spending is fragmented on the basis of episodic illness, chronic conditions, and highly complex diseases, which requires managed care throughout the lifecycle. The demand for healthcare varies significantly with variations in socio-demographic, economic, social and political factors. In low-and-middle-income-countries such as India, universal-health-coverage is not possible without clear understanding of major drivers of health spending, and how they vary as per the socio-economic covariates. This study is an attempt to examine the major drivers of the higher spending on inpatient care in India, by addressing some

key questions: what are the major determinants of healthcare spending for major diseases in India? What determines the behaviour of people to avail and treat for certain diseases? And, what are the regional dimensions of healthcare spending on these diseases? Data were extracted from National-Sample-Survey-Organization, 71st round, 2014. Two-part-model (TPM) has been used to explore the relative effect of various socio-economic covariates on out-of-pocket-expenditure (OOPE) for hospitalization. A conceptual framework has been proposed by the authors. Study reported notable regional variations in hospitalization in India. There have been evidences of triple burden of diseases, as households having cardio-vascular diseases, disability/injuries, and non-communicable diseases have incurred higher OOPE. TPM indicates that being elderly, educated, higher caste, reimbursed, private-care, richer quintile, other financing sources, having CVDs, NCDs, and injury/disability, have a positive and significant association with OOPE on inpatient care. Present study reveals that affordability of healthcare services is still prime concern in few of the regions such as north-eastern and eastern regions. There has been a significant variation in level of OOPE due to treatment of diseases which demands inpatient care. Analyzing health expenditure by the prevalence of diseases will makes the healthcare costs much more understandable and reducing the widespread inequalities in healthcare.

Key words: Demand; Healthcare expenditure; Inpatient-care; Regional-variations; inequality; India.

Pandemic and the risk factors of multidimensional health poverty among children in Maharashtra

Rekha V

Maharashtra is the Covid-19 hotspot that accounts for nearly one-third of the total cases in India. Many districts in Maharashtra experience the double burden of coronavirus and undernutrition. The pandemic and the associated lockdown have heightened the undernourishment crisis in the state. The pre-existing morbidities and multiple deprivations pose huge challenges in the absence of community welfare programmes. Given the scenario, it is important to strengthen the COVID-19 intervention strategies through regional and cluster mapping to identify the most vulnerable group of children. The study uses data from the fourth round of District Level Household and Facility Survey to present an empirical assessment of the multidimensional health poverty among under-five children across districts of Maharashtra.

Following Alkire Foster method, the study proposes a multidimensional approach to provide a true picture of the severity of the undernutrition. The four child nutritional indicators like stunting, wasting, underweight and anaemia are aggregated into one single composite index called Multidimensional Health Poverty Index (MHPI). In Maharashtra, 47.2 and 46.4 percent of below-five boys and girls are MHPI poor since they are deprived in two or more of the weighted malnutrition indicators. The depth of the deprivations is around 63% for both the gender which means that undernourished children in Maharashtra, on average experience 63% of the weighted deprivations. District level health poverty estimates reveal geographical clustering of multidimensional health poor. At least one in every two children on average is multidimensionally health poor in 18 districts of Maharashtra which accounts for the majority of the population. Thane a tribal district, close to Mumbai which is the epicentre of the pandemic in the country have 48 % of its child population multidimensionally health poor. In Thane, 18.7 % of its children living under severe multiple deprivations, where the intensity of health poverty is at an alarming rate of 70 %. The MHPI identifies for policy makers who is health poor and how intensely they suffer from health deprivations; and allows them to take direct action for the population groups at highest risk. Income, parental education and health condition are found having the strong association with the health poverty status of the children in Maharashtra.

Keywords: Anthropometry, child health, multidimensional health poverty, undernutrition

Prophylactic cost of Covid-19 amongst the diabetic patients in the northern state of Himachal Pradesh

Sumit Oberoi, Pooja Kansra

Covid-19 is acknowledged as the biggest pandemic in human history that does not consider any monetary and ethnic background. The present study estimates the direct outpatient and inpatient prophylactic cost of Covid-19 amongst diabetic patients in Himachal Pradesh. A primary data of 170 diabetic patients was collected from the districts of Shimla, Kangra and Mandi. The convenience sampling approach has been employed, and the respondents were selected from the top 3 districts with highest number Covid-19 cases and fatality. The online survey was performed from May 2020 to June 2020. Estimates of both outpatient care and the inpatient care were reported. The results of the study highlight mean direct prophylactic cost of outpatient care viz. consultation fees, adjustments in the pharmacotherapy, frequent

diagnostic expenditure, lifestyle modification cost (fitness products), expenditure on hygiene products (sanitizers), stocking adequate medication and telehealth expenditure is ₹110, ₹775, ₹175, ₹1029, ₹135, ₹568 and ₹112, respectively. The mean direct prophylactic cost of inpatient care viz. consultation fees, adjustments in the pharmacotherapy, room tariff, special diet and frequent diagnostic expenditure is ₹150, ₹1107, ₹575, ₹105 and ₹250, respectively. The estimates reveal the mean prophylactic cost of outpatient care is exorbitant in comparison to inpatient care. These estimates reveal the high prophylactic cost of Covid-19 and call for corrective measures to be introduced to reduce the economic menace of Covid-19 through preventive measures. Diabetic patients endeavoured to cope with the prophylactic cost of Covid-19 predominantly by using past savings, mobilizing cash, buying part of medicines, espousing home remedies and seeking assistance from friends/family.

Keywords: Prophylactic Cost; Covid-19; Diabetes; Economic Menace; Himachal Pradesh and Cope.

(Non)adhering to scientific measures in COVID 19 control: Applying Behavioral Economics

Rivu Basu, Achin Chakraborty

The Corona virus epidemic has seen its one year of emergence and in many ways it has changed the way the world was. While virtually all the countries have been affected by the disease, the proposed measures to prevent the disease is simple but has to be sustained, like wearing masks, washing hands, avoiding crowded places. In spite of that most of the people have not been able to diligently follow these advices in almost all the countries. The author wants to explore some of the factors here that may have deterred people from sticking to these measures using the newly emerging field of behavioral economics. The author starts from a philosophical point of view and goes into the debate between utilitarianism and libertinism and comes to the criticism of both the theories. In fact a middle way of paternalistic libertinism has been proposed as a better way of explaining many of the behaviors that are apparently not rational according to neoclassical frameworks. Kahnemann's prospect theory, with its cognitive biases like heuristics, anchoring, salience and above all social norms are found to be explaining many of the behaviors in a better way. The author, however has to give evidences from popular media and anecdotes in many cases, due to paucity of better quality evidence.

Keywords: Covid Control, Behavioral economics, cognitive biases

**Human Resources in Health (HRH) underpinnings of public health systems in India:
Exploring provider choice.**

Althaf Shajahan, Muneera Kuthirodath, Fawaz Kareem

The study investigates the impact of human resource for health on provider choice and healthcare utilisation in the country. The study made use of two data sources; nationally representative NSSO survey (71st round of social consumption of health conducted in 2014 and 6th round of Economic Census conducted in 2013). Health resources were measured as the sum of total number of medical establishments in public and private sectors both in rural and urban area, and total medical labour force engaged in public and private sectors. Healthcare utilisation has two parameters: whether public or private care providers were chosen most and total duration of stay in the hospital. This study compares and contrasts the impact of HRH factors on public provider choice in Kerala vis-à-vis BIMARU states. We find that every additional employment in public health workforce in Kerala leads to a substantial 2.2 times odds of choosing a public hospital for IP cases while we do not find any significant impact of change in private workforce on public provider choice in Kerala. These effects are rather miniscule in the case of BIMARU states. This empirical verification found that there is significant and strong positive relationship/association between total availability of HRH in public sector and public provider choice and public healthcare utilisation. The size, composition, distribution and performance of health workforce are crucial in achieving health goals of a country.

Keywords: human resources for health, public provider choice, healthcare utilisation, health resource availability, BIMARU

Impact of COVID 19 on critical illness in India

Shaswat Mishra, Rajeev A.

The beginning of the year 2020 threw the world population into an unforeseen and unique pandemic COVID-19 with all countries struggling to overcome it. India's Covid-19 lockdown shot an arrow on the critical health services and disrupted it to a large extent, the estimation of which is still unknown. The effect of non-covid health outcomes is still unknown and unpublished. The mortality trends comparison especially among critical patients like dialysis

in the eight months of lockdown is an observant parameter in the paper. The mortality increase is greater among females and disadvantaged groups. Barriers to transportation and disruptions in hospital services appear to be the main drivers of increased morbidity and mortality. The results highlight the unintended consequences of the lockdown on critical and life-saving non-COVID health services that must be taken into account in the implementation of future policy efforts to control the spread of pandemics. The information received from all corners of the world seems fragmented and contradictory. In these times, till there is availability of robust data, we need a simplified approach to handle both COVID-19 and Non-Covid data. The economics of understanding the Non-Covid emergencies is paramount as they do cover a significant portion of fatalities that have occurred in the lockdown phase, not to mention the dearth of data for the same. The abstract cover three major portions: (i) Consumer analysis (economics) on spending on healthcare during the lockdown and unlock phases; (ii) Importance of highlighting delay in treatment of Non-covid Patients suffering complexities and their own incentives for the same; and (iii) •the unintended consequences of the lockdown on critical and life-saving non-COVID health services that must be considered in the implementation of future policy efforts to control the spread of pandemics. The rising caseloads with social and economic restrictions have been hailed as prime parameters to derailment of public sentiments causing hardships and anxiety in consumer's mind and budgetary allocations. The discussion on pandemic related deaths seems paramount but it does not disregard other diseases. It has been observed during lockdown phase that patients preferred serious treatment (visiting hospitals) at a later stage of their treatment course. The reasons for the same being fear of the pandemic superseding their own chronic ailments and surety of having saved more medical expenses which they are conventionally aware is required in the final stages of treatment. The pandemic also instilled the trust of home remedies even for primary symptoms of Covid-19, the credit of which is largely given to public institutions who were unsure of any primary healthcare for covid-19. Pandemic-accelerated trends in consumer behavior have the potential to transform various aspects of the healthcare system (David Betts, Leslie Korenda, Shane Giulliani, 2020). It becomes imperative to discuss the co-existence of consumers' changing needs and organizations potential to obtain them at minimal disposal rate moreover working towards future of public health. The pandemic challenged the already stifled healthcare industry making consumers self-reliant towards an immediate sense of well-being with increased consumer activation on virtual/digital level but simultaneously decreasing it with reported cases of increased levels of anxiety, financial and economic worries. The intervention of stakeholders in removing the distrust of consumers on spending on healthcare is of

paramount importance. The question that arises is what incentives drove the people to stay back and wait for the situation to recover even though they are aware that chronic diseases are fatal in whatsoever form they come and an immediate treatment is demand of it at any given time (once detected/diagnosed).

Keywords: Non-Covid emergencies, Health Pocket Allocations, Non-Covid Mortality

Gendered differentials in symptoms, morbidity, and case fatality rate in COVID-19 pandemic in India: A study of Karnataka state

Shubham Ranjan, Anupreet Kaur, Ramna Thakur

COVID-19 pandemic has caused a heavy loss of life and has redefined human health concerns worldwide. It has indeed had an adverse outcome on the health of both the genders but statistics reveal that fewer women are getting affected directly than men, though the former might be more affected by its consequences. In developing countries like India which are more likely to experience the gender-divide in providing population-wide services, it becomes critical to analyze the impact of both disease and consequences on both the gender. It will help policymakers to focus on the appropriate measures in the ongoing fight to control the further spread. In this study, publicly available patient-level raw data has been used from <https://api.covid19india.org/> between 09th March 2020 to 05th September 2020. By integrating the gender dimension in research, we have analyzed the gender differentials in the symptoms, morbidity, and mortality due to COVID-19 in Karnataka along with pattern of symptoms and multimorbidity in case of deceased cases. A total of 78,983 COVID-19 patients comprising of 63.6% males and 36.4% females were included in the study. Out of total reported patients, 10.1% were reported as deceased in the state of whom 68.4% were males and 31.6% females. The overall prevalence rate was higher among males than females across all districts of the state. The case fatality rate was observed higher among females in districts like Bengaluru Rural, Mandya, Chitradurga, Ballari and Tumakuru while the same was higher among males in rest of the districts. We found that symptoms and multimorbidity pattern also showed significant differences among different gender. Out of total deceased cases, the symptoms pattern among patients suffering from only breathlessness with no fever and cough had the highest share, while patients suffering from cough with no fever and breathlessness exhibited the lowest percentage in both the genders. In the case of multimorbidity, patients suffering

from diabetes and hypertension with no other morbidity had the highest share among females as compared to their male counterpart. Patients suffering from not any other morbidity than COVID-19 had the highest percentage among males than females. The present research emphasized the gender dimension in research to better understand and manage the COVID-19 pandemic in India. It throws light on the significance of the region, age, and gender in delineating the pandemic and highlights gender as one of the key elements in identifying the severity of the region's pandemic.

Keywords: gender, multimorbidity, symptoms, COVID-19, pandemic, Karnataka

The question of decentralized health governance and strengthening fund structure to fight COVID-19 crisis in north Bengal

Farhat Hossain

The present study analyses existing level of health infrastructure and mission flexi-pool funds across the different regions of West Bengal. NSS divides the state into five regions to understand the regional distinction of West Bengal. The five regions comprise of Himalayan Region, Eastern Plain Region, Southern Plains Region, Central Plains Region and Western Plain Region. The existing evidence on health infrastructure, mission flexi-pool funds and expenditure clearly shows wide disparity within the regions and districts of West Bengal. It is found from the study that the incidence of deprivation is higher in the eastern plain region and lowers in the southern plain region. The COVID-19 infrastructure in West Bengal reveals that southern plain region has the highest number of both public and private hospitals with the maximum number of beds. Among all-regions of West Bengal, Himalayan Region and Western plain region has the lowest number of Government designated COVID-19 hospitals. North Bengal region has limited availability of health manpower, equipment, masks, sanitizer, Personal Protection Equipment (PPE) kit and insufficient health infrastructure during the pandemic. The test per million populations was quite low in Eastern plain and central plain region. ICMR lab for both government and private is mainly located in Kolkata only. The institution of local governance and the region-specific development boards failed to address the health priorities of the various regions in West Bengal. Although these region-specific development boards were established to reducing the visible gaps of underdevelopment of the region but it failed to deliver the expected development outcomes.

Keywords: Health Infrastructure, Decentralisation, National Health Mission, Rogi Kalyan Samiti, VHSNC

What Decentralisation in Health can teach us? Evidence from Kerala's Response to Covid-19 Pandemic

Vishnu E.K

A small Indian state, Kerala has been at the forefront of the fight against the coronavirus pandemic. The state's response and preparedness to the virus have been recognised all over the world. There were many factors behind this state's success story; one of them is the decentralised health care system and thereby the peoples' participation at the grassroots level. Regarding the preparedness and response to the pandemic, the state had been doing much better than other states in India. It was possible because of the decentralised healthcare system which has been performing well since the 1990s. Many response activities have been doing at the local level through local self-governments, Kudumbashree, and social welfare schemes. The community participation at a booming pace was due to the coordination and collective activities at the local level that led to the flattening the curve especially in the first and second waves of the pandemic and keeping the fatality rate low. This paper will look into how the decentralised healthcare system acted and the role of local self-governments and Kudumbashree units to tackle the virus's spread, specifically in the first two waves.

Key Words: Decentralisation, Kerala, Covid-19, LSGs, Community Participation, Social Welfare